June 22, 2004

Elizabeth Hunt
Executive Director
The Thioesters Association
941 Rhonda Place S.E.
Leesburg, VA 20175

Dear Ms. Hunt:

The Office of Pollution Prevention and Toxics is transmitting EPA's comments on the robust summaries and test plan for Thiodipropionitrile posted on the ChemRTK HPV Challenge Program Web site on January 23, 2004. I commend The Thioesters Association for its commitment to the HPV Challenge Program.

EPA reviews test plans and robust summaries to determine whether the reported data and test plans will provide the data necessary to adequately characterize each SIDS endpoint. On its Challenge Web site, EPA has provided guidance for determining the adequacy of data and preparing test plans used to prioritize chemicals for further work.

EPA will post this letter and the enclosed comments on the HPV Challenge Web site within the next few days. As noted in the comments, we ask that The Thioesters Association advise the Agency, within 60 days of this posting on the Web site, of any modifications to its submission. Please send any electronic revisions or comments to the following e-mail addresses: oppt.ncic@epa.gov and chem.rtk@epa.gov.

If you have any questions about this response, please contact Richard Hefter, Chief of the HPV Chemicals Branch, at 202-564-7649. Submit questions about the HPV Challenge Program through the "Contact Us" link on the HPV Challenge Program Web site pages or through the TSCA Assistance Information Service (TSCA Hotline) at (202) 554-1404. The TSCA Hotline can also be reached by e-mail at tsca-hotline@epa.gov.

I thank you for your submission and look forward to your continued participation in the HPV Challenge Program.

Sincerely,

-S-

Oscar Hernandez, Director
Risk Assessment Division

Enclosure

cc: W. Penberthy
M. E. Weber

EPA Comments on Chemical RTK HPV Challenge Submission:
Thiodipropionitrile

Summary of EPA Comments

The sponsor, the Thioesters Association, submitted a test plan and robust summaries to EPA for Thiodipropionitrile (TDPN, CAS No. 111-97-7) dated December 16, 2003. EPA posted the submission on the ChemRTK HPV Challenge Website on January 23, 2004.

EPA has reviewed this submission and has reached the following conclusions:

1. Physicochemical Properties. The submitted data are adequate for the purposes of the HPV Challenge Program.

2. Environmental Fate. EPA agrees that ready biodegradation data are needed.

3. Health Effects. EPA agrees with the submitter's proposal for conducting mutagenicity and chromosomal aberrations assays to address genetic toxicity endpoints. The submitter's proposal for reduced health effects testing based on a closed-system intermediate claim is not adequately supported (see below). Therefore, data gaps exist for the repeated-dose, reproductive, and developmental toxicity endpoints.

4. Ecological Effects. Only ECOSAR values for acute toxicity to fish, invertebrates and algae were provided. The submitter needs to provide adequate measured data for these endpoints on an adequate analog in order to use predicted values for these endpoints.

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.

EPA Comments on the Thiodipropionitrile Challenge Submission

General

EPA disagrees with the submitter's claim (Appendix 1 of the submission) that the sponsored chemical is a closed-system intermediate and thus eligible for the reduced testing rationale in the U.S. HPV Challenge Program. EPA's conclusion is based on the following reasons:

(1) The test plan does not provide monitoring data for any medium. The test plan mentions that waste aqueous layers containing "minimal concentrations" of TDPN are sent to on-site process wastewater treatment facilities. The test plan does not indicate if periodic sampling of the wastewater for TDPN occurs, either before or after treatment. In order to meet the information requirements for a closed system intermediate, the submitter needs to provide monitoring data, including the limits of detection, showing that TDPN is not detected in any medium following treatment or if monitoring data are not available, a statement that no monitoring has taken place and the basis for believing, in the absence of data, that the chemical has not been released and that exposure does not occur. Although, according to the test plan, no industrial hygiene monitoring data are available for TDPN at either site where it is manufactured and consumed, the test plan asserts that any worker exposure would be "infrequent and at a very low level" because of the limited volatility of TDPN and precautions taken to comply with OSHA regulations pertaining to a more volatile precursor chemical (29 CFR 1910.1045). However, no exposure limits for TDPN were identified.

(2) The test plan does not provide any data on the occurrence of unreacted TDPN in the chemicals produced from this intermediate. The test plan states that TDPN "is not present appreciably in any downstream product" but does not provide any basis for this assertion.

Test Plan

Physicochemical Properties (melting point, boiling point, vapor pressure, partition coefficient and water solubility)

The submitted data for these endpoints are adequate for the purposes of the HPV Challenge Program.

Environmental Fate (photodegradation, stability in water, biodegradation, fugacity)

The submitted data for photodegradation, stability in water, and fugacity are adequate for the purposes of the HPV Challenge Program.

Biodegradation. EPA agrees with the submitter's proposal for conducting a biodegradation test, which should follow OECD TG 301 for ready biodegradation.

Health Effects (acute toxicity, repeated-dose toxicity, genetic toxicity, and reproductive/developmental toxicity)

The submitted data on acute toxicity are adequate for the purposes of the U.S. HPV Challenge program. EPA agrees with the submitter's proposal for conducting mutagenicity and chromosomal aberrations assays to address genetic toxicity endpoints. The submitter's proposal for reduced health effects testing based on a closed-system intermediate claim is not adequately supported. Therefore, data gaps exist for the repeated-dose, reproductive, and developmental toxicity endpoints (even if the closed-system intermediate claim was met, a developmental toxicity test would be needed) and can be addressed by conducting a repeated-dose/reproduction/developmental toxicity screening test (OECD TG 422).

Repeated dose toxicity. The submitted summary for a rat 32-day oral feeding study (from 1953) has several deficiencies and the submitter has assigned a reliability code of 4. A combined screening test (OECD TG 422) will address the endpoint.

Ecological Effects (fish, invertebrates, and algae)

The test plan states that testing of TDPN is unnecessary because the environmental concentrations are less than toxic levels estimated by ECOSAR. This rationale does not reflect HPV Challenge program guidance. To adequately address these endpoints, the submitter needs to provide either measured data on the subject chemical or measured data for these endpoints on an adequate analog to support the ECOSAR data (see guidance at (http://www.epa.gov/chemrtk/sarfinl1.htm).

Followup Activity

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.